

**Chronic Venous Insufficiency Resemble Lymphedema Leg**

Dwijesh Kumar Panda\*

\**Lymphologist & Pathologist, Department of Pathology and Medicine, SANARIA Lymphology Clinic and Research Centre, Bhubaneswar, Odisha, India*

Received: 13-08-2019 / Revised: 20-8-2019 / Accepted: 24-09-2019

**ABSTRACT**

Chronic lower limb swelling is frequently encountered in clinical practice. Recurrent lymphangitis due to *Wuchereria bancrofti* infection and chronic venous insufficiency are most common. Chronic inflammation and fibrosis are histological hallmark of lymphedema leg. Chronic venous insufficiency results in venous dilation and venous reflux of long duration. The classical signs include ulceration, pigmentation and itching of the leg above the ankle. Both the conditions resemble each other although the treatment is different.

**Keywords:** Lymphedema, Venous reflux, Doppler test, Ankle- Brachial Index.

© The Author(s). 2019 Open Access. This work is licensed under a Creative Commons Attribution. The full terms of this license are available at our website and incorporate the Creative Commons Attribution. <https://creativecommons.org/licenses/by/4.0/>

**CASE REPORT**

A male aged about 40 years presented with swelling, tenderness, redness of the left leg, oozing ulcer above the ankle, numbness and tingling, itching and dark pigmentation of the skin. He was getting pain in the foot when sitting or lying down and relieved by standing. The superficial veins were dilated and lipodermatosclerosis (fibrosing dermatitis of the subcutaneous tissue) was marked. The patient was non-diabetic and normotensive. The Lipid profile, liver function tests and renal function tests found to be normal. The C - reactive protein (inflammation marker) was elevated.

Monoclonal circulating adult filarial antigen test (OG<sub>4</sub>C<sub>3</sub>) was done for diagnosis of lymphedema as the patient belonged to an endemic zone of lymphatic filariasis. The test was found negative.

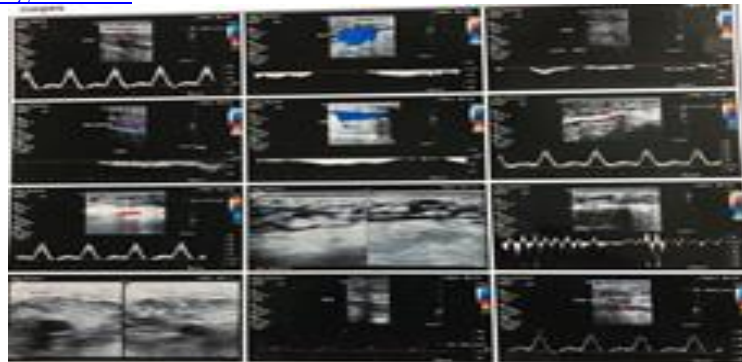
The venous Doppler study of the left leg was done. Common femoral, superficial femoral and popliteal veins were normal in course, caliber and compressibility. Normal color flow response to Valsalva and distal compression noted. Sapheno-femoral junction was normal. No reflux seen. GSV was competent. SSV (~3mm) was incompetent and shows multiple superficial varicosities. Moderate subcutaneous edematous thickening in leg was seen. Incompetent SSV (superficial saphenous vein) with multiple superficial varicosities found. There was no evidence of deep vein thrombosis.

\*Correspondence

**Dr. Dwijesh Kumar Panda**

M5/12, Acharya Vihar, Bhubaneswar, Odisha, India-751013.

E-mail: [doctordwijesh@gmail.com](mailto:doctordwijesh@gmail.com)



**Fig-1: Venous Doppler of Leg- Incompetent SSV**



**Fig-2: C V I Leg- Lateral View**

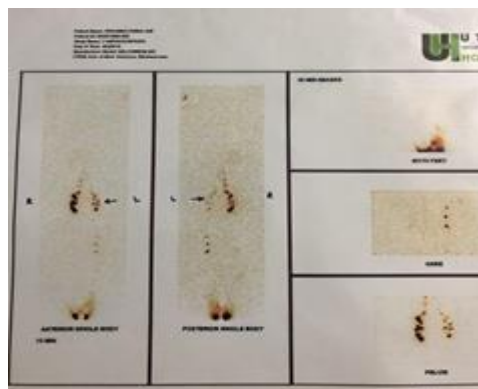


**Fig-3: C V I Leg –Anterior View**

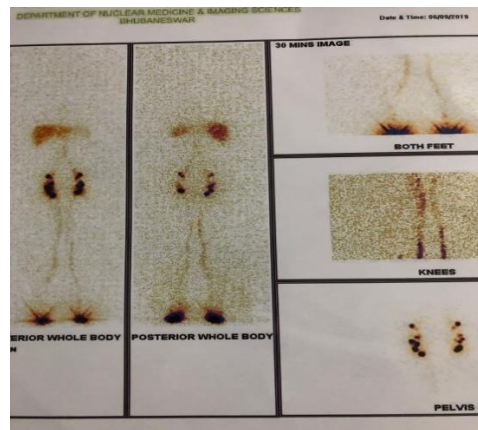
Ankle Brachial Pressure Index (ABPI) measurement was done to exclude peripheral arterial disease from venous insufficiency with ulceration as concurrent arterial disease may be present in both situations.

**Table 1: shows clinical findings & Tests**

S. No.	Clinical Findings & Tests	Dermato - Lymphangitis	Infected Venous Insufficiency
1	Pain, edema, Non healing ulcer	May be present	Usually present
2	Pigmentation of skin	Uncommon	Common
3	Stemmer sign	Positive	Negative
4	Lymphoscintigraphy	Suggestive	Non-suggestive
5	OG <sub>4</sub> C <sub>3</sub> Test	Positive	Negative
6	Duplex Ultrasonography	Negative	Confirmatory
7	DVT- Varicose vein	Absent	May be present
8	Diabetes and Hypertension	May be associated	Usually present
9	Telangiectasia	Absent	Present
10	Ankle-Brachial Pressure Index	Normal	Abnormal



**Fig 4: Lymphoscintigraphy of Lymphedema Leg**



**Fig 5: Lymphoscintigraphy of Normal Leg**

Lymphoscintigraphy was done to exclude lymphatic blockage due to lymphedema. The picture [5] shows the obstruction of lymphatics in the leg of a patient suffering from lymphedema. The picture [6] shows flow of normal lymph in the leg.

## DISCUSSION

Chronic vein abnormalities are present in up to 50 percent of individual [1] [2]. The prevalence of symptoms and clinical signs of venous disease correlates with the presence of venous reflux identified with duplex ultrasound [3]. Initial treatment for most patients with chronic venous disease is conservative and includes leg elevation, exercise, and compression therapy. Chronic venous insufficiency and lymphedema are having similar clinical signs and symptoms, but the treatment differs. Elastic compression stocking is used in both the cases [4]. Surgical methods may be required for patients with recurrent or refractory venous ulceration [5].

The ABPI (Ankle Brachial Pressure Index) is the ratio of the systolic pressure of ankle to brachial artery. An ABPI between 0.9 and 1.2 is considered normal (free from significant PAD), while a lesser than 0.9 indicates arterial disease. The ABPI of the patient was 1.1. It indicated that the patient was not suffering from peripheral artery disease (PAD). This process is usually performed in patients with weak or absent pulses. In such case compression therapy, which is the standard treatment for venous insufficiency, is contraindicated [6].

A Doppler ultrasound (Vascular ultrasound) is a test that uses high-frequency sound waves to measure the amount of blood flow through the arteries and veins, usually those that supply blood to the arms and legs.

Vascular flow studies, also known as blood flow studies, can detect abnormal flow within an artery or blood vessel. It helps identify blockages in the arteries and veins and detect blood clots [7].

Lymphoscintigraphy is a simple and efficient method to establish the diagnosis and document therapeutic response. The radiopharmaceutical (sulfur colloids or Nano-colloids) was injected subcutaneously in the webs between the first and second toes. After injection the patient was asked to walk for about 30 minutes. Images of the feet and lower limbs (knee and thigh regions) were taken at various time intervals. Lymphoscintigraphy is a widely available, simple, highly useful test for documentation of lymphedema in patients with the leg swelling of unclear etiology [8] [9].

Og4c3 is a quantitative adult filarial antigen detection ELISA test of blood which is more than 98% sensitive and 95% specific. It is a reliable test for diagnosis of lymphedema leg due to lymphatic filariasis [10].

Stemmer's sign is a thickened fold of skin at the base of the second toe or second finger that can be gently pinched and lifted. The presence of this sign is most often an early diagnostic indication of primary lymphedema; however, it can also develop later in secondary lymphedema [11].

Duplex ultrasonic imaging combines high-resolution real-time imaging with simultaneous Doppler analysis. It provides accurate evaluation of hemodynamically significant occlusive vascular lesions. This also provides information regarding blood velocity, lumen area, plaque composition, ulceration, and hemodynamic turbulence [12].

**CONCLUSION**

Chronic venous insufficiency resembles lymphedema of leg. Systemic antibiotic therapy and elastic compression stocking is required in both the cases. Obstruction of arterial blood flow must be evaluated before advising elastic compression stocking. Lymphedema causing obstruction of lymph flow in the leg must be ruled out prior to treatment of chronic venous insufficiency.

**Declaration of patient consent:** Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

**REFERENCES**

1. Zahariev T, Anastassov V, Girov K, et al. Prevalence of primary chronic venous disease: the Bulgarian experience. *IntAngiol* 2009; 28:303.
2. Retrieved from WHO Weekly Epidemiological Record 16 December 2011, 86th year. No. 51-52, 2011; 86: 581–588:<http://www.who.int/wer>.
3. Panda DK, Medical Therapy, a better alternative in advanced lymphedema of leg, 2019; 13(4),DOI:10.7860/JCDR/2019/40711.1277.
4. Campsie C, Boccardo F, Tacchella M. Reconstructive microsurgery of [13] lymph vessels: the personal method of Lymphatic-Venous-Lymphatic (LVL) interpositioned grafted shunt. *Microsurgery*. 1995;16(3):161-66.
5. Panda DK, Mohapatra DP. Dermato-Lymphangitis in Filariasis Resembles Infected Chronic Venous Insufficiency: Two Case

Reports and Review of Literature. DOI: 10.7860/JCDR/2018/37460.12046.

6. Aboyans V, Ho E, Denenberg JO, Ho LA, Natarajan L, Criqui MH. "The association between elevated ankle systolic pressures and peripheral occlusive arterial disease in diabetic and nondiabetic subjects". *J Vasc Surg*. 2008;48(5): 1197–203.
7. Nüllen H, Noppeney T. Diagnosis and treatment of varicose veins: part 2: therapeutic procedures and results. *Chirurg*. 2010;81(12):1125–1138.
8. Neil M. Khilnani, Duplex Ultrasound Evaluation of Patients With Chronic Venous Disease of the Lower Extremities *American Journal of Roentgenology*. 2014; 202: 633-642.
9. Tek Chand Kalawat, Ravi Kumar Chittoria, Praveen Kumar Reddy, BatchuSuneetha, Ravishwar Narayan, and Parthsarathi Ravi. *Indian J Nucl Med*. 2012 Oct-Dec; 27(4): 226–230.
10. Lalitha P, Ravichandran M, Suba S, Kaliraj P, Narayanan RB, Jayaraman K. Quantitative assessment of circulating antigens in human lymphatic filariasis: a field evaluation of monoclonal antibody-based ELISA using blood collected on filter strips. *Trop Med Int Health*, 1998; 3(1).
11. Pereira De Godoy JM1, De Moura Álvares R, Simon Torati JL, De FátimaGuerreiro Godoy M.,Stemmer's sign--possibilities and limits of clinical diagnosis of lymphedema, *G Ital DermatolVenereol*. 2010 ; 145(4):547-9.
12. S M Wetzner, L C Kiser, J S Bezreh, Duplex ultrasound imaging: vascular applications. Feb 1 1984 <https://doi.org/10.1148/radiology.150.2.6691110>.

**Conflict of Interest: None**

**Source of Support: Nil**